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Term:

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| <u>L57</u>  | 5983161.pn.                    | 1                | <u>L57</u>                    |
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| <u>L54</u>  | "navagation technologies".as.  | 2                | <u>L54</u>                    |
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| <u>L50</u>  | "dreissen"\$.in.               | 18               | <u>L50</u>                    |
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| <u>L45</u>  | 707.clas.                      | 19723            | <u>L45</u>                    |

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| <u>L25</u> | 707/100                              | 4360   | <u>L25</u> |
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L2      L1 and search  
L1      information near query

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## Hit List

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☐ 1. Document ID: US 5572449 A

L55: Entry 1 of 1

File: USPT

Nov 5, 1996

US-PAT-NO: 5572449

DOCUMENT-IDENTIFIER: US 5572449 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Automatic vehicle following system

DATE-ISSUED: November 5, 1996

INVENTOR-INFORMATION:

| NAME           | CITY         | STATE | ZIP CODE | COUNTRY |
|----------------|--------------|-------|----------|---------|
| Tang; Qing     | Storrs       | CT    |          |         |
| Wang; Wei-Ping | Storrs       | CT    |          |         |
| Gan; Zhongxue  | Storrs       | CT    |          |         |
| Zhang; Ruiming | Storrs       | CT    |          |         |
| Moh; John      | Freshmeadows | NY    |          |         |

ASSIGNEE-INFORMATION:

| NAME             | CITY         | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|------------------|--------------|-------|----------|---------|-----------|
| VI&T Group, Inc. | Freshmeadows | NY    |          |         | 02        |

APPL-NO: 08/ 245865 [PALM]

DATE FILED: May 19, 1994

INT-CL: [06] B60 T 7/16

US-CL-ISSUED: 364/565; 364/426.01, 364/424.01, 364/426.04, 180/271, 180/170, 340/903

US-CL-CURRENT: 700/304; 180/170, 180/271, 340/903, 701/70, 702/149

FIELD-OF-SEARCH: 364/424.01, 364/449, 364/426.01, 364/565, 364/566, 364/461, 364/426.04, 364/468, 364/424.05, 340/990, 340/992, 340/903, 340/904, 342/455, 123/349, 123/350

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO

ISSUE-DATE

PATENTEE-NAME

US-CL

|                |               |                  |            |
|----------------|---------------|------------------|------------|
| <u>3952301</u> | April 1976    | Sorkin           | 343/7VM    |
| <u>4361202</u> | November 1982 | Minovitch        | 180/168    |
| <u>4621705</u> | November 1986 | Etoh             | 180/169    |
| <u>4622636</u> | November 1986 | Tachibana        | 364/424    |
| <u>4628317</u> | December 1986 | Nishikawa et al. | 340/903    |
| <u>4703429</u> | October 1987  | Sakata           | 364/426    |
| <u>4706195</u> | November 1987 | Yoshino et al.   | 364/426    |
| <u>4791570</u> | December 1988 | Sherman et al.   | 364/436    |
| <u>4855822</u> | August 1989   | Narendra et al.  | 358/103    |
| <u>4893240</u> | January 1990  | Karkouti         | 364/424.05 |
| <u>4962457</u> | October 1990  | Chen et al.      | 364/443    |
| <u>5039217</u> | August 1991   | Maekawa et al.   | 364/424.01 |
| <u>5053964</u> | October 1991  | Mister et al.    | 364/424.01 |
| <u>5053979</u> | October 1991  | Etoh             | 364/565    |
| <u>5058024</u> | October 1991  | Inselberg        | 364/461    |
| <u>5101198</u> | March 1992    | Abou et al.      | 340/825.5  |
| <u>5122961</u> | June 1992     | Toyama et al.    | 364/424.01 |
| <u>5124923</u> | June 1992     | Takahashi        | 364/424.01 |
| <u>5126735</u> | June 1992     | Trevijano        | 340/902    |
| <u>5159480</u> | October 1992  | Gordon et al.    | 359/181    |
| <u>5173859</u> | December 1992 | Deering          | 364/424.01 |
| <u>5222024</u> | June 1993     | Orita et al.     | 364/468    |
| <u>5223844</u> | June 1993     | Mansell et al.   | 342/357    |
| <u>5234071</u> | August 1993   | Kajiwara         | 180/169    |
| <u>5285523</u> | February 1994 | Takahashi        | 364/424.01 |
| <u>5311431</u> | May 1994      | Cao et al.       | 364/424.05 |
| <u>5331561</u> | July 1994     | Barrett et al.   | 364/424.01 |
| <u>5337236</u> | August 1994   | Fogg et al.      | 364/424.04 |
| <u>5369591</u> | November 1994 | Broxmeyer        | 364/461    |

## OTHER PUBLICATIONS

Shladover et al., "Automatic Vehicle Control Developments in the PATH Program", IEEE, pp. 114-129, 1991.

"Automated Highway Studies at The Ohio State University--An Overview", IEEE Transactions On Vehicular Technology, vol. 40, No. 1, Feb. 1991, pp. 100-113.

"An Overview of Systems Studies of Automated Highway Systems", IEEE Transactions On Vehicular Technology, vol. 40, No. 1, Feb. 1991, pp. 82-99.

"Smart Cars on Smart Roads: Problems of Control", IEEE Transactions on Automatic Control, vol. 38, No. 2, Feb. 1993, pp. 195-207.

"Automatic Vehicle Control Developments in the Path Program", IEEE Transactions On Vehicular Technology, vol. 40, No. 1, Feb. 1991, pp. 114-129.

"Visual Control of an Autonomous Vehicle (BART)--The Vehicle-Following Problem", IEEE Transactions On Vehicular Technology, vol. 40, No. 3, Aug. 1991, pp. 654-662.

ART-UNIT: 234

PRIMARY-EXAMINER: Teska; Kevin J.

ASSISTANT-EXAMINER: Phan; Thai

ATTY-AGENT-FIRM: McCormick, Paulding &amp; Huber

## ABSTRACT:

An automatic vehicle following system is provided for controlling a following vehicle to maintain at least a predetermined distance behind a preceding vehicle and to substantially follow the path of the preceding vehicle. An on-line measurement system of the preceding vehicle generates signals indicative of the velocity (having speed and directional components) of the preceding vehicle, and a communication system transmits the velocity signals to the following vehicle. The following vehicle likewise has a communication system for receiving the signals from the preceding vehicle, and an on-line measurement system for providing signals indicative of the velocity of the following vehicle and signals indicative of the distance between the two vehicles. A signal processing system of the following vehicle is coupled to the communication system and on-line measurement system for estimating motion trajectory of the preceding vehicle based on the difference in the velocities of the preceding and following vehicles and the following distance. A control system generates control signals and takes action so as to perform speed control and maintain at least a predetermined safe following distance between the two vehicles, and steering control to substantially follow the path of the preceding vehicle.

26 Claims, 3 Drawing figures

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Abstracts | Abstracts | Claims | KWIC | Draw De |
|------|-------|----------|-------|--------|----------------|------|-----------|-----------|-----------|--------|------|---------|
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L4: Entry 7 of 7

File: USPT

Sep 7, 1999

US-PAT-NO: 5948040

DOCUMENT-IDENTIFIER: US 5948040 A

TITLE: Travel reservation information and planning system

DATE-ISSUED: September 7, 1999

## INVENTOR-INFORMATION:

| NAME               | CITY     | STATE | ZIP CODE | COUNTRY |
|--------------------|----------|-------|----------|---------|
| DeLorme; David M.  | Yarmouth | ME    |          |         |
| Gray; Keith A.     | Dresden  | ME    |          |         |
| Ferguson; T. Angus | Portland | ME    |          |         |

## ASSIGNEE-INFORMATION:

| NAME                   | CITY     | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|------------------------|----------|-------|----------|---------|-----------|
| DeLorme Publishing Co. | Yarmouth | ME    |          |         | 02        |

APPL-NO: 08/ 797471   [PALM]

DATE FILED: February 6, 1997

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATIONS This patent application is a continuation-in-part (CIP) of the David M. DeLorme et al. U.S. patent application Ser. No. 08/661,600 filed Jun. 11, 1996, for COMPUTER AIDED ROUTING AND POSITIONING SYSTEM, now U.S. Pat. No. 5,802,492 which is a CIP of the David M. DeLorme et al. U.S. patent application Ser. No. 08/381,214 filed Jan. 31, 1995 for COMPUTER AIDED ROUTING SYSTEM, now U.S. Pat. No. 5,559,707, issued Sep. 24, 1996, which is a CIP of the David M. DeLorme et al. U.S. patent application Ser. No. 08/265,327 filed Jun. 24, 1994 for COMPUTER AIDED MAP LOCATION SYSTEM now abandoned. This patent application is also a CIP of the Keith A. Gray U.S. patent application Ser. No. 08/521,828 filed on Aug. 31, 1995, for COMPUTERIZED ADDRESS LOCATION AND COMMUNICATION SYSTEM now abandoned. All of the cross-referenced applications have a common assignee who is the assignee of the present application. The contents of these related patent applications are incorporated herein by reference.

INT-CL: [06] G06 F 19/00, G01 C 21/00

US-CL-ISSUED: 701/201; 701/208, 701/211, 340/990, 705/5

US-CL-CURRENT: 701/201; 340/990, 701/208, 701/211, 705/5

FIELD-OF-SEARCH: 701/201, 701/202, 701/207, 701/208, 701/209, 701/211, 701/212, 701/213, 705/5, 705/6, 340/988, 340/989, 340/990, 340/995

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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|                          | PAT-NO         | ISSUE-DATE     | PATENTEE-NAME    | US-CL     |
|--------------------------|----------------|----------------|------------------|-----------|
| <input type="checkbox"/> | <u>4359631</u> | November 1982  | Lockwood et al.  | 360/12    |
| <input type="checkbox"/> | <u>4862357</u> | August 1989    | Ahlstrom et al.  | 705/6     |
| <input type="checkbox"/> | <u>4926336</u> | May 1990       | Yamada           | 364/444   |
| <input type="checkbox"/> | <u>5021953</u> | June 1991      | Webber et al.    | 705/6     |
| <input type="checkbox"/> | <u>5172321</u> | December 1992  | Ghaem et al.     | 701/202   |
| <input type="checkbox"/> | <u>5191523</u> | March 1993     | Whitesage        | 705/6     |
| <input type="checkbox"/> | <u>5208756</u> | May 1993       | Song             | 364/449   |
| <input type="checkbox"/> | <u>5231584</u> | July 1993      | Nimura et al.    | 364/444   |
| <input type="checkbox"/> | <u>5237499</u> | August 1993    | Garback          | 705/5     |
| <input type="checkbox"/> | <u>5243528</u> | September 1993 | Lefebvre         | 701/211   |
| <input type="checkbox"/> | <u>5253166</u> | October 1993   | Dettebach et al. | 705/5     |
| <input type="checkbox"/> | <u>5272638</u> | December 1993  | Martin et al.    | 701/202   |
| <input type="checkbox"/> | <u>5331546</u> | July 1994      | Webber et al.    | 705/6     |
| <input type="checkbox"/> | <u>5353034</u> | October 1994   | Sato et al.      | 340/988   |
| <input type="checkbox"/> | <u>5359527</u> | October 1994   | Takanabe et al.  | 364/449   |
| <input type="checkbox"/> | <u>5369588</u> | November 1994  | Hayami et al.    | 701/209   |
| <input type="checkbox"/> | <u>5422809</u> | June 1995      | Griffin et al.   | 705/5     |
| <input type="checkbox"/> | <u>5444618</u> | August 1995    | Seki et al.      | 364/420   |
| <input type="checkbox"/> | <u>5519619</u> | May 1996       | Seda             | 701/201   |
| <input type="checkbox"/> | <u>5537324</u> | July 1996      | Nimura et al.    | 364/449   |
| <input type="checkbox"/> | <u>5587911</u> | December 1996  | Asano et al.     | 364/444.2 |
| <input type="checkbox"/> | <u>5724520</u> | March 1998     | Goheen           | 705/5     |

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Makulowich, John, "Traveling by Virtual Reservation," Washington Technology, Jan. 23, 1997, p. 42.

Knecht, Bruce, G., "Microsoft Puts Newspapers in Highanxiety.com," The Wall Street Journal, Jul. 15, 1996, pp. B1, B10.

"InforTravel Expands Service," Business Geographics, vol. 4, No. 6, Jun., 1996, p. 13.

DelRosso, Laura, "Firm Customizes Internet Res Link," Travel Weekly, vol. 55, No. 26, Apr. 1, 1996, pp. 43-44, 47.

"Casto Travel's Resource Library," www.casto.com.

"Sunnyside Computing, Inc.," www.itn.net.

ART-UNIT: 361

PRIMARY-EXAMINER: Nguyen; Tan

ATTY-AGENT-FIRM: Atwood; Pierce Caseiro; Chris A.

ABSTRACT:

Computerized travel reservation information and planning system that generates "map ticket" output in various media, for guidance and transactions en route. Such print or electronic documents can include bar or alphanumeric codes for automated recognition and/or access. WHERE?, WHO/WHAT?, WHEN? and HOW? menus enable flexible user inquiries accessing selectable geographic, topical, temporal and transactional data records and relational processing. Sub-menus provide further capabilities: e.g. routing, topical searching; searches of events calendars, almanacs, appointment books, related itinerary scheduling; trip budgeting issues, plus travel arrangement availabilities or other goods/services offers. Online communications links access updated or supplemental information on places, times, topics and other provider goods/service offers. Online computer-aided routing system enables input of selectable travel origin, destination, and waypoints to compute travel routes, available transportation services, costs, options, and schedules. A point-of-interest database lets users pick types of attractions or accommodations within a user-selected region around routes of travel. Users engage in an iterative planning process, revising or editing travel plans, previewing travelogs of alternate routes, selecting point of interest parameters, comparing times and costs of transportation options, in order to achieve a satisfactory travel plan. The system provides printed or electronic output that may include any one or more of text itinerary, ordered set of travel maps, customized collection of information on points of interest information and a selected array of valid reservation confirmations, tickets and/or discount coupons coded with elements for automated recognition and processing. Mobile users, including GPS-linked users, can access the system via wireless communication units.

80 Claims, 16 Drawing figures

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L14: Entry 56 of 62

File: USPT

May 26, 1998

US-PAT-NO: 5758281

DOCUMENT-IDENTIFIER: US 5758281 A

TITLE: Personal communications service using wireline/wireless integration

DATE-ISSUED: May 26, 1998

## INVENTOR-INFORMATION:

| NAME                | CITY          | STATE | ZIP CODE | COUNTRY |
|---------------------|---------------|-------|----------|---------|
| Emery; Mark J.      | Herndon       | VA    |          |         |
| Tucker; Brenda N.   | Mitchellville | MD    |          |         |
| Schwartz; Laurie D. | Garrett Park  | MD    |          |         |

## ASSIGNEE-INFORMATION:

| NAME                                 | CITY      | STATE | ZIP CODE | COUNTRY | TYPE | CODE |
|--------------------------------------|-----------|-------|----------|---------|------|------|
| Bell Atlantic Network Services, Inc. | Arlington | VA    |          |         |      | 02   |

APPL-NO: 08/ 471037   [PALM]

DATE FILED: June 6, 1995

## PARENT-CASE:

This application is a continuation of U.S. application Ser. No. 08/229,891, filed Apr. 19, 1994, pending, which is a division of U.S. application Ser. No. 07/845,924, filed Mar. 5, 1992, now U.S. Pat. No. 5,353,331. TECHNICAL FIELD The present invention relates to a personal communication service allowing a user to send and receive calls from a single portable handset using a single assigned number whether at home or roaming. The present invention provides method and system structures for interfacing the capabilities of a land line telephone system with a radio link communication system, using a land line Advanced Intelligent Network (AIN). In particular, the new system would control the provision of private network service features to users of both radio link systems and land line systems to provide unbroken, or seamless, access to a variety of different types of communications systems linked to the inventive system. Acronyms The written description uses a large number of acronyms to refer to various services and system components. Although known, use of several of these acronyms is not strictly standardized in the art. For purposes of this discussion, acronyms therefore will be defined as follows: Action Control Point (ACP) Advanced Intelligent Network (AIN) Advanced Services Platform (ASP) Authentication Center (AC) Base Station (BS) Cellular Subscriber Station (CSS) Common Channel Inter-office Signalling (CCIS) Dual Tone Multifrequency (DTMF) Data and Reporting System (D&RS) Equipment Identity Register (EIR) Home Location Register (HLR) Integrated Service Control Point (ISCP) Intelligent Peripheral (IP) Local Access and Transport Area (LATA) Low-Power Self Contained Cell (LPSC) Mobile Identification Number (MIN) Mobility Controller (MC) Mobile Switching Center (MSC) Mobile Telephone Switching Office (MTSO) Overhead Message Train (OMT) Personal Base Station (PBS) Personal Communication Service (PCS) Plain Old Telephone Service (POTS) Private Branch Exchange (PBX) Private Automatic Branch Exchange (PABX) Public Switched Telephone Network (PSTN) Service Control Point (SCP) Service Management System (SMS) Service Switching Point (SSP)

Signalling Transfer Point (STP) Station Message Detail Recording (SMDR) Service  
 Creation Environment (SCE) Telephone Company (TELCO) Temporary Local Directory  
 Number (TLDN) Transaction Capabilities Applications Protocol (TCAP) Visitor  
 Location Register (VLR) Wireless Private Branch Exchange (WPBX)

INT-CL: [06] H04 M 11/00, H04 M 15/00, H04 M 3/42, H04 M 7/00

US-CL-ISSUED: 455/428; 455/433, 455/435, 379/115, 379/207, 379/220, 379/229  
 US-CL-CURRENT: 455/428; 379/114.28, 379/221.02, 379/221.08, 379/229, 379/230,  
455/433, 455/435.1

FIELD-OF-SEARCH: 379/58, 379/59, 379/60, 379/61, 379/62, 379/207, 379/219, 379/220,  
 379/229, 379/230, 379/111, 379/112, 379/113, 379/114, 379/115, 455/33.1, 455/33.2,  
 455/54.1, 455/422, 455/428, 455/433, 455/435, 455/445, 455/517, 455/560, 455/561

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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|                          | PAT-NO         | ISSUE-DATE     | PATENTEE-NAME     | US-CL |
|--------------------------|----------------|----------------|-------------------|-------|
| <input type="checkbox"/> | <u>4178476</u> | December 1979  | Frost             |       |
| <input type="checkbox"/> | <u>4191860</u> | March 1980     | Weber             |       |
| <input type="checkbox"/> | <u>4313035</u> | January 1982   | Jordan et al.     |       |
| <input type="checkbox"/> | <u>4562572</u> | December 1985  | Goldman et al.    |       |
| <input type="checkbox"/> | <u>4611094</u> | September 1986 | Asdmuth           |       |
| <input type="checkbox"/> | <u>4611096</u> | September 1986 | Asmuth            |       |
| <input type="checkbox"/> | <u>4654879</u> | March 1987     | Goldman et al.    |       |
| <input type="checkbox"/> | <u>4658416</u> | April 1987     | Tanaka            |       |
| <input type="checkbox"/> | <u>4680785</u> | July 1987      | Akiyama et al.    |       |
| <input type="checkbox"/> | <u>4698839</u> | October 1987   | DeVaney et al.    |       |
| <input type="checkbox"/> | <u>4737978</u> | April 1988     | Burke et al.      |       |
| <input type="checkbox"/> | <u>4737983</u> | April 1988     | Frauenthal        |       |
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| <input type="checkbox"/> | <u>4852148</u> | July 1989      | Shibata et al.   |        |
| <input type="checkbox"/> | <u>4866703</u> | September 1989 | Black et al.     |        |
| <input type="checkbox"/> | <u>4876738</u> | October 1989   | Selby            | 379/60 |
| <input type="checkbox"/> | <u>4878238</u> | October 1989   | Rash et al.      |        |
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| <input type="checkbox"/> | <u>4899373</u> | February 1990  | Lee et al.       |        |
| <input type="checkbox"/> | <u>4901340</u> | February 1990  | Parker et al.    |        |
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|                          | <u>5109400</u> | April 1992     | Patsiokas et al. |        |

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| <input type="checkbox"/> | <u>5237612</u> | August 1993    | Raith           |          |
| <input type="checkbox"/> | <u>5247571</u> | September 1993 | Kay et al.      | 379/207  |
| <input type="checkbox"/> | <u>5251248</u> | October 1993   | Tokunaga et al. | 379/207  |
| <input type="checkbox"/> | <u>5257406</u> | October 1993   | Ito             | 379/60   |
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| <input type="checkbox"/> | <u>5353331</u> | October 1994   | Emery et al.    | 379/58   |
| <input type="checkbox"/> | <u>5361295</u> | November 1994  | Solomon         | 379/211  |
|                          | <u>5373547</u> | December 1994  | Patsiokas       | 379/61   |

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| <input type="checkbox"/> | <u>5438568</u> | August 1995    | Weisser, Jr. |         |
| <input type="checkbox"/> | <u>5448632</u> | September 1995 | Iyob et al.  |         |
| <input type="checkbox"/> | <u>5452350</u> | September 1995 | Reynolds     |         |
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| <input type="checkbox"/> | <u>5481603</u> | January 1996   | Gutierrez    |         |
| <input type="checkbox"/> | <u>5513250</u> | April 1996     | McAllister   | 379/230 |

## FOREIGN PATENT DOCUMENTS

| FOREIGN-PAT-NO | PUBN-DATE     | COUNTRY | US-CL |
|----------------|---------------|---------|-------|
| 2009294        | January 1990  | JP      |       |
| 2009295        | January 1990  | JP      |       |
| 2272856        | November 1990 | JP      |       |
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ART-UNIT: 265

PRIMARY-EXAMINER: Kuntz; Curtis

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ATTY-AGENT-FIRM: Lowe, Price, LeBlanc & Becker

ABSTRACT:

The Advanced Intelligent Network (AIN) wireline system connects to and controls processing of calls to a Personal Communication Service subscriber's wireless handset via a home base station or a wireless communication network. Depending on its current location, the subscriber's handset automatically registers with the base station or with a mobility controller of the wireless network. A new registration with the base station when the handset comes within range causes that station to update the subscriber's home location register in a central data base of the AIN. Similarly, when a handset first registers with a mobility controller, that controller updates the subscriber's home location register in the central data base of the AIN. In response to calls directed to the subscriber, the AIN accesses the home location register to determine the current location where the handset is registered. The AIN then uses that data to route the call to the current location. In response to calls from the handset, the central data base provides instruction data to the land line network and/or a mobility controller to extend a requested special service to the calling subscriber.

24 Claims, 9 Drawing figures